

## **Homework XIIIb**

### Session XIII.4

1. Helium is supplied in high pressure tanks. If I have a 10 liter tank at 200 atmospheres of pressure, how many 3 liter balloons can I fill (assume the balloons are at one atmosphere).
2. I fill my car tires to 32 PSI in the summer, when the temperature is  $25^{\circ}\text{C}$ . In the winter, the temperature drops to  $-25^{\circ}\text{C}$ . How much has the pressure fallen?
3. Consider one of the balloons in problem 1. How much energy does the gas in one of these balloons have?